

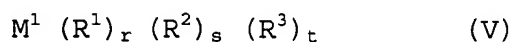


ATTACHMENT A

Claims 1 - 20: (Cancelled)

5 21. (New) A process for preparing a catalyst solid for olefin polymerization by contacting, without any isolation of an intermediate,

- (A) at least one organic transition metal compound;  
10 (B) at least one organometallic compound of formula (V)



where

15  $M^1$  is an alkali metal, an alkaline earth metal, or a metal of group 13 of the Periodic Table;

$R^1$  is hydrogen,  $C_1$ - $C_{10}$ -alkyl,  $C_6$ - $C_{15}$ -aryl, halo- $C_1$ - $C_{10}$ -alkyl, halo- $C_6$ - $C_{15}$ -aryl, 20  $C_7$ - $C_{40}$ -arylalkyl,  $C_7$ - $C_{40}$ -alkylaryl,  $C_1$ - $C_{10}$ -alkoxy, halo- $C_7$ - $C_{40}$ -alkylaryl, halo- $C_7$ - $C_{40}$ -arylalkyl, or halo- $C_1$ - $C_{10}$ -alkoxy;

25  $R^2$  and  $R^3$  are each hydrogen, halogen,  $C_1$ - $C_{10}$ -alkyl,  $C_6$ - $C_{15}$ -aryl, halo- $C_1$ - $C_{10}$ -alkyl, halo- $C_6$ - $C_{15}$ -aryl,  $C_7$ - $C_{40}$ -arylalkyl,  $C_7$ - $C_{40}$ -alkylaryl,  $C_1$ - $C_{10}$ -alkoxy, halo- $C_7$ - $C_{40}$ -alkylaryl, halo- $C_7$ - $C_{40}$ -arylalkyl, or 30 halo- $C_1$ - $C_{10}$ -alkoxy;

$r$  is an integer from 1 to 3; and

$s$  and  $t$  are integers from 0 to 2, where the sum  $r+s+t$  corresponds to the valence of  $M^1$ ;

- 35 (C) at least one organic compound comprising at least one functional group comprising active hydrogen, wherein the functional group is selected from the groups consisting of hydroxyl group, primary and 40 secondary amino groups, mercapto groups, silanol

groups, carboxyl groups, amido groups, and imido groups;

(D) at least one Lewis base; and

(E) at least one support.

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22. (New) The process for preparing a catalyst solid for olefin polymerization as claimed in claim 21, wherein the component (B) is a mixture of at least two different organometallic compounds.

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23. (New) The process for preparing a catalyst solid for olefin polymerization as claimed in claim 22, wherein the component (B) is a mixture of at least one aluminum-containing organometallic compound and at least one boron-containing organometallic compound.

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24. (New) The process for preparing a catalyst solid for olefin polymerization as claimed in claim 22, wherein the component (B) comprises at least two different aluminum-containing organometallic compounds.

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25. (New) The process for preparing a catalyst solid for olefin polymerization as claimed in claim 21, wherein the organic compound of component (C) comprises at least one hydroxyl group.

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26. (New) The process for preparing a catalyst solid for olefin polymerization as claimed in claim 25, wherein the component (C) is a compound of formula (VI)

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where

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A is an atom of group 13, 14 or 15 of the Periodic

Table, or a group comprising from 2 to 20 carbon atoms;

5         $R^4$     are identical or different, and are each  
independently of one another, hydrogen, halogen,  
 $C_1$ - $C_{20}$ -alkyl,  $C_1$ - $C_{20}$ -haloalkyl,  $C_1$ - $C_{10}$ -alkoxy,  $C_6$ - $C_{20}$ -  
aryl,  $C_6$ - $C_{20}$ -haloaryl,  $C_6$ - $C_{20}$ -aryloxy,  $C_7$ - $C_{40}$ -  
10        arylalkyl,  $C_7$ - $C_{40}$ -haloarylalkyl,  $C_7$ - $C_{40}$ -alkylaryl,  
 $C_7$ - $C_{40}$ -haloalkylaryl, or  $OSiR_3^5$ ; where

$R^5$     are identical or different, and are each  
independently of one another, hydrogen, halogen,  
15         $C_1$ - $C_{20}$ -alkyl,  $C_1$ - $C_{20}$ -haloalkyl,  $C_1$ - $C_{10}$ -alkoxy,  $C_6$ - $C_{20}$ -  
aryl,  $C_6$ - $C_{20}$ -haloaryl,  $C_6$ - $C_{20}$ -aryloxy,  $C_7$ - $C_{40}$ -  
arylalkyl,  $C_7$ - $C_{40}$ -haloarylalkyl,  $C_7$ - $C_{40}$ -alkylaryl,  
or  $C_7$ - $C_{40}$ -haloalkylaryl;

20         $y$     is at least 1; and

$x$     is an integer from 0 to 41.

25        27. (New) The process for preparing a catalyst solid for  
olefin polymerization as claimed in claim 23, wherein the  
component (B) comprises at least two different aluminum-  
30        containing organometallic compounds.

      28. (New) The process for preparing a catalyst solid for  
olefin polymerization as claimed in claim 27, wherein the  
organic compound of component (C) comprises at least one  
35        hydroxyl group.

      29. (New) The process for preparing a catalyst solid for  
olefin polymerization as claimed in claim 28, wherein the  
40        component (C) is a compound of formula (VI)



where

5           A     is an atom of main group 13, 14 or 15 of the  
Periodic Table, or a group comprising from 2 to 20  
carbon atoms;

10           R<sup>4</sup>    are identical or different, and are each  
independently of one another, hydrogen, halogen,  
C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>1</sub>-C<sub>20</sub>-haloalkyl, C<sub>1</sub>-C<sub>10</sub>-alkoxy, C<sub>6</sub>-C<sub>20</sub>-  
aryl, C<sub>6</sub>-C<sub>20</sub>-haloaryl, C<sub>6</sub>-C<sub>20</sub>-aryloxy, C<sub>7</sub>-C<sub>40</sub>-  
arylalkyl, C<sub>7</sub>-C<sub>40</sub>-haloarylalkyl, C<sub>7</sub>-C<sub>40</sub>-alkylaryl,  
15           C<sub>7</sub>-C<sub>40</sub>-haloalkylaryl, or OSiR<sub>3</sub><sup>5</sup>, where

20           R<sup>5</sup>    are identical or different, and are each  
independently of one another, hydrogen, halogen,  
C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>1</sub>-C<sub>20</sub>-haloalkyl, C<sub>1</sub>-C<sub>10</sub>-alkoxy, C<sub>6</sub>-C<sub>20</sub>-  
aryl, C<sub>6</sub>-C<sub>20</sub>-haloaryl, C<sub>6</sub>-C<sub>20</sub>-aryloxy, C<sub>7</sub>-C<sub>40</sub>-  
arylalkyl, C<sub>7</sub>-C<sub>40</sub>-haloarylalkyl, C<sub>7</sub>-C<sub>40</sub>-alkylaryl,  
or C<sub>7</sub>-C<sub>40</sub>-haloalkylaryl;

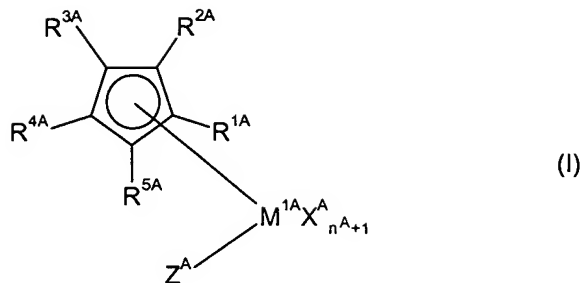
25           y     is at least 1; and

          x     is an integer from 0 to 41.

30   30. (New) The process for preparing a catalyst solid for  
olefin polymerization as claimed in claim 28, wherein the  
component (A) comprises at least one cyclopentadienyl-type  
ligand.

35   31. (New) The process for preparing a catalyst solid for  
olefin polymerization as claimed in claim 21, wherein the  
component (A) is of formula (I)

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wherein

$M^{1A}$  is titanium, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum or tungsten, or an element of group 3 or lanthanides of the Periodic Table;

$X^A$  are identical or different, and are each independently of one another, fluorine, chlorine, bromine, iodine, hydrogen,  $C_1$ - $C_{10}$ -alkyl,  $C_2$ - $C_{10}$ -alkenyl,  $C_6$ - $C_{15}$ -aryl,  $C_7$ - $C_{40}$ -alkylaryl,  $C_7$ - $C_{40}$ -arylalkyl,  $-OR^{6A}$ , or  $-NR^{6A}R^{7A}$ , or two  $X^A$  radicals are joined to form a substituted or unsubstituted diene ligand;

$R^{6A}$  and  $R^{7A}$  are identical or different, and are each independently of one another,  $C_1$ - $C_{10}$ -alkyl,  $C_6$ - $C_{15}$ -aryl,  $C_7$ - $C_{40}$ -arylalkyl,  $C_7$ - $C_{40}$ -alkylaryl, fluoroalkyl, fluoroaryl, wherein the  $C_7$ - $C_{40}$ -arylalkyl or  $C_7$ - $C_{40}$ -alkylaryl comprise from 1 to 19 carbon atoms in the alkyl radical and from 6 to 21 carbon atoms in the aryl radical;

$n^A$  is 1, 2 or 3, where  $n^A$  is such that component (A) of formula (I) is uncharged;

$R^{1A}$  to  $R^{5A}$  are identical or different, and are each independently of one another, hydrogen,

C<sub>1</sub>-C<sub>22</sub>-alkyl, 5- to 7-membered cycloalkyl or  
 cycloalkenyl which optionally bear C<sub>1</sub>-C<sub>10</sub>-  
 alkyl groups as substituents, C<sub>2</sub>-C<sub>22</sub>-alkenyl,  
 C<sub>6</sub>-C<sub>22</sub>-aryl, C<sub>7</sub>-C<sub>40</sub>-arylalkyl, C<sub>7</sub>-C<sub>40</sub>-alkylaryl,  
 -NR<sup>8A</sup><sub>2</sub>, -N(SiR<sup>8A</sup><sub>3</sub>)<sub>2</sub>, -OR<sup>8A</sup>, -OSiR<sup>8A</sup><sub>3</sub>, -SiR<sup>8A</sup><sub>3</sub>,  
 where the radicals R<sup>1A</sup> to R<sup>5A</sup> may optionally  
 be substituted by at least one halogen, or  
 two radicals R<sup>1A</sup> to R<sup>5A</sup>, in particular  
 adjacent radicals, together with the atoms  
 connecting them are joined to form a five-,  
 six- or seven-membered ring, or a five-, six-  
 or seven-membered heterocycle comprising at  
 least one atom selected from the group  
 consisting of N, P, O and S;

R<sup>8A</sup> are identical or different, and are each  
 independently of one another, C<sub>1</sub>-C<sub>10</sub>-alkyl,  
 C<sub>3</sub>-C<sub>10</sub>-cycloalkyl, C<sub>6</sub>-C<sub>15</sub>-aryl, C<sub>1</sub>-C<sub>4</sub>-alkoxy,  
 or C<sub>6</sub>-C<sub>10</sub>-aryloxy; and  
 Z<sup>A</sup> is as defined for X<sup>A</sup>, or is

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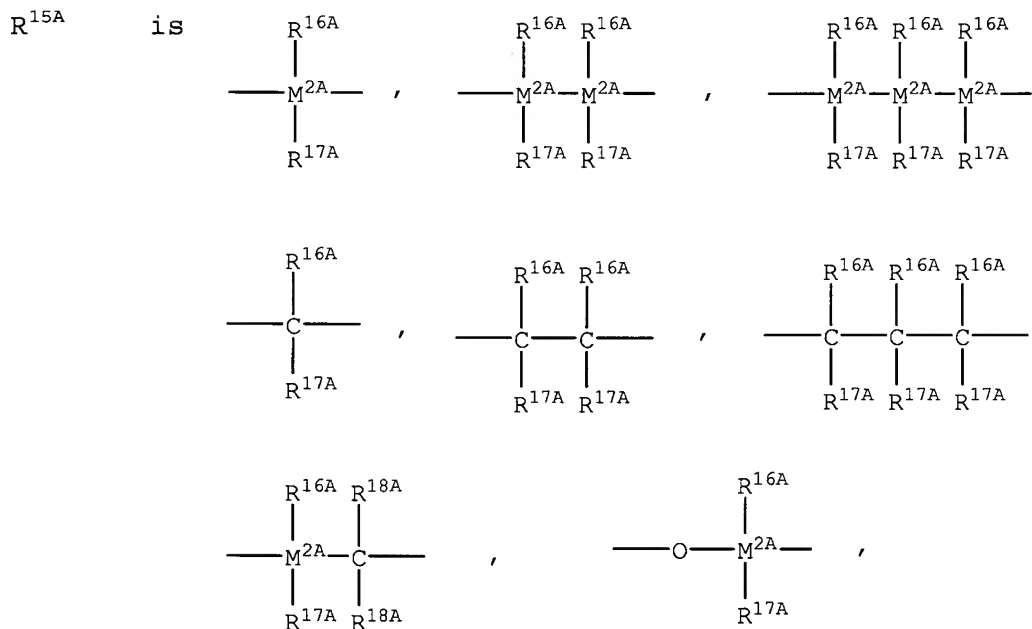


where  
 R<sup>9A</sup> to R<sup>13A</sup> are identical or different, and are each  
 independently of one another, hydrogen,  
 C<sub>1</sub>-C<sub>22</sub>-alkyl, 5- to 7-membered cycloalkyl or  
 cycloalkenyl which optionally bear C<sub>1</sub>-C<sub>10</sub>-  
 alkyl groups as substituents, C<sub>2</sub>-C<sub>22</sub>-alkenyl,  
 C<sub>6</sub>-C<sub>22</sub>-aryl, C<sub>7</sub>-C<sub>40</sub>-arylalkyl, C<sub>7</sub>-C<sub>40</sub>-alkylaryl,  
 -NR<sup>14A</sup><sub>2</sub>, -N(SiR<sup>14A</sup><sub>3</sub>)<sub>2</sub>, -OR<sup>14A</sup>, -OSiR<sup>14A</sup><sub>3</sub>, or -

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$\text{SiR}^{14\text{A}}_3$ , where  $\text{R}^{9\text{A}}$  to  $\text{R}^{13\text{A}}$  may also be substituted by halogen, and/or two radicals  $\text{R}^{9\text{A}}$  to  $\text{R}^{13\text{A}}$  together with the atoms connecting them may be joined to form a five-, six- or seven-membered ring, or a five-, six- or seven-membered heterocycle comprising at least one atom selected from the group consisting of N, P, O and S;

$\text{R}^{14\text{A}}$  are identical or different, and are each independently of one another,  $\text{C}_1\text{-C}_{10}$ -alkyl,  $\text{C}_3\text{-C}_{10}$ -cycloalkyl,  $\text{C}_6\text{-C}_{15}$ -aryl,  $\text{C}_1\text{-C}_4$ -alkoxy, or  $\text{C}_6\text{-C}_{10}$ -aryloxy, or  $\text{R}^{4\text{A}}$  and  $\text{Z}^{\text{A}}$  together form an  $-\text{R}^{15\text{A}}_{\text{v}}\text{A-A}^{\text{A}}-$  group, where



$-\text{BR}^{16\text{A}}-$ ,  $-(\text{BNR}^{16\text{A}}\text{R}^{17\text{A}})-$ ,  $-\text{AlR}^{16\text{A}}-$ ,  $-\text{Ge}-$ ,  $-\text{Sn}-$ ,  $-\text{O}-$ ,  $-\text{S}-$ ,  $-\text{SO}-$ ,  $-\text{SO}_2-$ ,  $-\text{NR}^{16\text{A}}-$ ,  $-\text{CO}-$ ,  $-\text{PR}^{16\text{A}}-$  or  $-(\text{POR}^{16\text{A}})-$ ,

where

$R^{16A}$ ,  $R^{17A}$  and  $R^{18A}$  are identical or different, and are  
each independently of one another,  
5 hydrogen, halogen, a trimethylsilyl  
group, a  $C_1$ - $C_{10}$ -alkyl group, a  $C_1$ - $C_{10}$ -  
fluoroalkyl group, a  $C_6$ - $C_{10}$ -fluoroaryl  
group, a  $C_6$ - $C_{10}$ -aryl group, a  $C_1$ - $C_{10}$ -  
10 alkoxy group, a  $C_7$ - $C_{15}$ -alkylaryloxy  
group, a  $C_2$ - $C_{10}$ -alkenyl group, a  $C_7$ - $C_{40}$ -  
arylalkyl group, a  $C_8$ - $C_{40}$ -arylalkenyl  
group, or a  $C_7$ - $C_{40}$ -alkylaryl group, or  
15 two adjacent radicals together with the  
atoms connecting them form a saturated  
or unsaturated ring having from 4 to  
15 carbon atoms;

20  $M^{2A}$  is silicon, germanium, or tin;

$A^A$  is -O- , -S- ,  $-NR^{19A}-$  ,  $-PR^{19A}-$   
,  $-O-R^{19A}$  ,  $-NR^{19A}_2$  ,  $-PR^{19A}_2$  , or an  
25 unsubstituted, substituted or fused,  
heterocyclic ring system, where

$R^{19A}$  are identical or different, and are each  
30 independently of one another,  $C_1$ - $C_{10}$ -  
alkyl,  $C_6$ - $C_{15}$ -aryl,  $C_3$ - $C_{10}$ -cycloalkyl,  
 $C_7$ - $C_{18}$ -alkylaryl, or  $-Si(R^{20A})_3$ ;

35  $R^{20A}$  is hydrogen,  $C_1$ - $C_{10}$ -alkyl,  $C_6$ - $C_{15}$ -aryl  
which optionally bear  $C_1$ - $C_4$ -alkyl groups  
as substituents, or  $C_3$ - $C_{10}$ -cycloalkyl;  
and

40  $V^A$  is 1 or, if  $A^A$  is an unsubstituted,



substituted or fused, heterocyclic ring  
system, 1 or 0

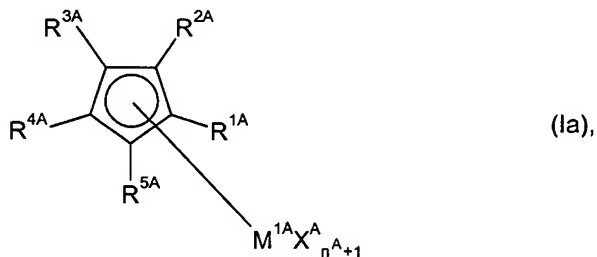
or  $R^{4A}$  and  $R^{12A}$  together form  $-R^{15A}-$ .

32. (New) The process for preparing a catalyst solid for  
olefin polymerization as claimed in claim 31, wherein

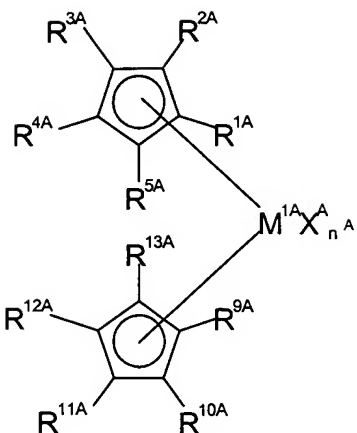
$X^A$  are identical, and are fluorine, chlorine,  
bromine,  $C_1$ - $C_7$ -alkyl or arylalkyl, or two  $X^A$   
together form, a 1,3-diene ligand, or a biaryloxy  
group; and

$M^{2A}$  is silicon.

33. (New) The process for preparing a catalyst solid for  
olefin polymerization as claimed in claim 31, wherein the  
compound of formula (I) is selected from the group  
consisting of



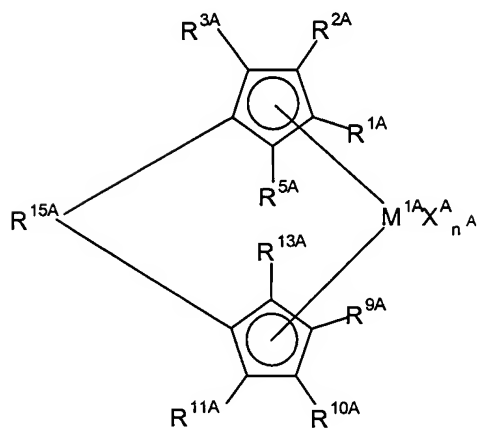
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(lb),

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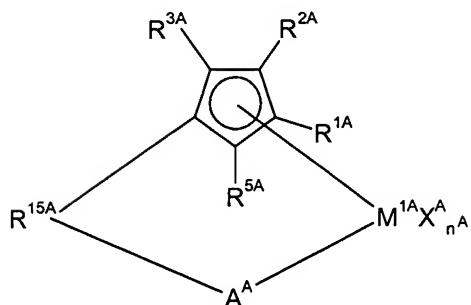
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(lc) and

20

25



(ld)

30

wherein in formula (Ia)

- $M^{1A}$  is titanium or chromium;  
 $X^A$  is chlorine,  $C_1$ - $C_4$ -alkyl, phenyl, alkoxy, or  
 aryloxy;  
 $n^A$  is 1 or 2; and  
 $R^{1A}$  to  $R^{5A}$  are each hydrogen, or  $C_1$ - $C_4$ -alkyl, or two  
 adjacent  $R^{1A}$  to  $R^{5A}$  radicals together with the

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atoms connecting them form a substituted or unsubstituted, unsaturated six-membered ring;

wherein in formula (Ib)

5

$M^{1A}$  is titanium, zirconium, hafnium, or chromium;

$X^A$  is chlorine,  $C_1$ - $C_4$ -alkyl, or benzyl, or two  $X^A$  radicals form a substituted or unsubstituted butadiene ligand;

10

$n^A$  is 1 or 2, with the proviso that if  $M^{1A}$  is chromium, then  $n^A$  is 0;

$R^{1A}$  to  $R^{5A}$  are each hydrogen,  $C_1$ - $C_8$ -alkyl,  $C_6$ - $C_{10}$ -aryl,  $-NR^{8A}_2$ ,  $-OSiR^{8A}_3$ ,  $-SiR^{8A}_3$ , or  $-Si(R^{8A})_3$ ; and

15

$R^{9A}$  to  $R^{13A}$  are each hydrogen,  $C_1$ - $C_8$ -alkyl,  $C_6$ - $C_{10}$ -aryl,  $-NR^{8A}_2$ ,  $-OSiR^{8A}_3$ ,  $-SiR^{8A}_3$ , or  $-Si(R^{8A})_3$ ;

or two  $R^{1A}$  to  $R^{5A}$  radicals and/or two  $R^{9A}$  to  $R^{13A}$  radicals together with the cyclopentadienyl ring form an indenyl or substituted indenyl system;

20

wherein in formula (Ic)

25

$R^{1A}$  and  $R^{9A}$  are identical or different, and are each independently of one another, hydrogen, or a  $C_1$ - $C_{10}$ -alkyl group;

30

$R^{5A}$  and  $R^{13A}$  are identical or different, and are each independently of one another, hydrogen, methyl, ethyl, isopropyl, or tert-butyl;

$R^{3A}$  and  $R^{11A}$  are each  $C_1$ - $C_4$ -alkyl; and

35

$R^{2A}$  and  $R^{10A}$  are each hydrogen; or two adjacent  $R^{2A}$  and  $R^{3A}$  radicals, or two  $R^{10A}$  and  $R^{11A}$  radicals together form a saturated or unsaturated cyclic group comprising from 4 to 44 carbon atoms;

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$R^{15A}$  is  $-M^{2A}R^{16A}R^{17A}-$ ,  $-CR^{16A}R^{17A}-CR^{16A}R^{17A}-$ ,  $-BR^{16A}-$ ,

or  $\text{-BNR}^{16\text{A}}\text{R}^{17\text{A}}\text{-}$  ;  
 $\text{M}^{1\text{A}}$  is titanium, zirconium, or hafnium; and  
 $\text{X}^{\text{A}}$  are identical or different and are each  
 5 chlorine,  $\text{C}_1\text{-C}_4\text{-alkyl}$ , benzyl, phenyl, or  $\text{C}_7\text{-C}_{15}\text{-alkylaryloxy}$ ;

wherein in formula (Id)

10  $\text{M}^{1\text{A}}$  is titanium, or zirconium;  
 $\text{X}^{\text{A}}$  is chlorine,  $\text{C}_1\text{-C}_4\text{-alkyl}$ , or phenyl, or  
 two  $\text{X}$  radicals together form a  
 substituted or unsubstituted butadiene  
 15 ligand;  
 $\text{R}^{15\text{A}}$  is  $\text{-SiR}^{16\text{A}}\text{R}^{17\text{A}}\text{-}$ , or  $\text{-CR}^{16\text{A}}\text{R}^{17\text{A}}\text{-CR}^{16\text{A}}\text{R}^{17\text{A}}\text{-}$ ;  
 and  
 $\text{A}^{\text{A}}$  is  $\text{-O-}$ ,  $\text{-S-}$ , or  $\text{-NR}^{19\text{A}}\text{-}$ ;  
 20  $\text{R}^{1\text{A}}$  to  $\text{R}^{3\text{A}}$  and  $\text{R}^{5\text{A}}$  are each hydrogen,  $\text{C}_1\text{-C}_{10}\text{-alkyl}$ ,  $\text{C}_3\text{-C}_{10}\text{-cycloalkyl}$ ,  $\text{C}_6\text{-C}_{15}\text{-aryl}$ , or  $\text{-Si(R}^{8\text{A}}\text{)}_3$ ,  
 or two adjacent radicals form a cyclic  
 group comprising from 4 to 12 carbon  
 25 atoms.

34. (New) The process for preparing a catalyst solid for  
 olefin polymerization as claimed in claim 29, wherein the  
 30 component (A) is  
 bis(cyclopentadienyl)zirconium dichloride,  
 bis(pentamethylcyclopentadienyl)zirconium dichloride,  
 bis(methylcyclopentadienyl)zirconium dichloride,  
 bis(ethylcyclopentadienyl)zirconium dichloride,  
 35 bis(n-butylcyclopentadienyl)zirconium dichloride,  
 bis(1-n-butyl-3-methylcyclopentadienyl)zirconium dichloride,  
 bis(indenyl)zirconium dichloride,  
 bis(tetrahydroindenyl)zirconium dichloride,  
 40 bis(trimethylsilylcyclopentadienyl)zirconium dichloride,

bis(cyclopentadienyl)zirconium dimethyl,  
 bis(pentamethylcyclopentadienyl)zirconium dimethyl,  
 bis(methylcyclopentadienyl)zirconium dimethyl,  
 bis(ethylcyclopentadienyl)zirconium dimethyl,  
 5 bis(n-butylcyclopentadienyl)zirconium dimethyl,  
 bis(1-n-butyl-3-methylcyclopentadienyl)zirconium dimethyl,  
 bis(indenyl)zirconium dimethyl,  
 bis(tetrahydroindenyl)zirconium didimethyl,  
 10 bis(trimethylsilylcyclopentadienyl)zirconium dimethyl,  
 dimethylsilanediyl(2-methyl-4-phenylindenyl)-(2,5-dimethyl-  
 N-phenyl-4-azapentalene)zirconium dichloride,  
 dimethylsilanediylbis(2-methyl-4-phenyl-4-  
 15 hydroazulenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-ethyl-4-phenyl-4-  
 hydroazulenyl)zirconium dichloride,  
 dimethylsilanediylbis(cyclopentadienyl)zirconium dichloride,  
 20 dimethylsilanediylbis(indenyl)zirconium dichloride,  
 dimethylsilanediylbis(tetrahydroindenyl)zirconium  
 dichloride,  
 ethylenebis(cyclopentadienyl)zirconium dichloride,  
 25 ethylenebis(indenyl)zirconium dichloride,  
 ethylenebis(tetrahydroindenyl)zirconium dichloride,  
 tetramethylethylene-9-fluorenylcyclopentadienylzirconium  
 dichloride,  
 30 dimethylsilanediylbis(3-tert-butyl-5-  
 methylcyclopentadienyl)zirconium dichloride,  
 dimethylsilanediylbis(3-tert-butyl-5-  
 ethylcyclopentadienyl)zirconium dichloride,  
 dimethylsilanediylbis(2-methylindenyl)zirconium dichloride,  
 35 dimethylsilanediylbis(2-isopropylindenyl)zirconium  
 dichloride,  
 dimethylsilanediylbis(2-tert-butylindenyl)zirconium  
 dichloride,  
 40 diethylsilanediylbis(2-methylindenyl)zirconium dibromide,

dimethylsilanediylbis(3-methyl-5-  
 methylcyclopentadienyl)zirconium dichloride,  
 dimethylsilanediylbis(3-ethyl-5-  
 isopropylcyclopentadienyl)zirconium dichloride,  
 5 dimethylsilanediylbis(2-ethylindenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-methyl-4,5-benzindenyl)zirconium  
 dichloride  
 dimethylsilanediylbis(2-ethyl-4,5-benzindenyl)zirconium  
 10 dichloride  
 methylphenylsilanediylbis(2-methyl-4,5-benzindenyl)zirconium  
 dichloride,  
 methylphenylsilanediylbis(2-ethyl-4,5-benzindenyl)zirconium  
 15 dichloride,  
 diphenylsilanediylbis(2-methyl-4,5-benzindenyl)zirconium  
 dichloride,  
 diphenylsilanediylbis(2-ethyl-4,5-benzindenyl)zirconium  
 20 dichloride,  
 diphenylsilanediylbis(2-methylindenyl)hafnium dichloride,  
 dimethylsilanediylbis(2-methyl-4-phenylindenyl)zirconium  
 dichloride,  
 25 dimethylsilanediylbis(2-ethyl-4-phenylindenyl)zirconium  
 dichloride,  
 dimethylsilanediylbis(2-methyl-4-(1-  
 naphthyl)indenyl)zirconium dichloride,  
 30 dimethylsilanediylbis(2-ethyl-4-(1-  
 naphthyl)indenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-propyl-4-(1-  
 naphthyl)indenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-i-butyl-4-(1-  
 35 naphthyl)indenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-propyl-4-(9-  
 phenanthryl)indenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-methyl-4-isopropylindenyl)zirconium  
 40 dichloride,

dimethylsilanediylbis(2,7-dimethyl-4-  
 isopropylindenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-methyl-4,6-  
 diisopropylindenyl)zirconium dichloride,  
 5 dimethylsilanediylbis(2-methyl-4-[p-  
 trifluoromethylphenyl]indenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-methyl-4-[3',5'-  
 dimethylphenyl]indenyl)zirconium dichloride,  
 10 dimethylsilanediylbis(2-methyl-4-[4'-tert-  
 butylphenyl]indenyl)zirconium dichloride,  
 diethylsilanediylbis(2-methyl-4-[4'-tert-  
 butylphenyl]indenyl)zirconium dichloride,  
 15 dimethylsilanediylbis(2-ethyl-4-[4'-tert-  
 butylphenyl]indenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-propyl-4-[4'-tert-  
 butylphenyl]indenyl)zirconium dichloride,  
 20 dimethylsilanediylbis(2-isopropyl-4-[4'-tert-  
 butylphenyl]indenyl)zirconium dichloride,  
 dimethylsilanediylbis(2-n-butyl-4-[4'-tert-  
 butylphenyl]indenyl)zirconium dichloride,  
 25 dimethylsilanediylbis(2-hexyl-4-[4'-tert-  
 butylphenyl]indenyl)zirconium dichloride,  
 dimethylsilanediyl(2-isopropyl-4-phenylindenyl)-(2-methyl-4-  
 phenylindenyl)zirconium dichloride,  
 30 dimethylsilanediyl(2-isopropyl-4-(1-naphthyl)indenyl)-(2-  
 methyl-4-(1-naphthyl)indenyl)zirconium dichloride,  
 dimethylsilanediyl(2-isopropyl-4-[4'-tert-  
 butylphenyl]indenyl)-(2-methyl-4-[4'-tert-butylphenyl]-  
 indenyl)zirconium dichloride,  
 35 dimethylsilanediyl(2-isopropyl-4-[4'-tert-  
 butylphenyl]indenyl)-(2-ethyl-4-[4'-tert-butylphenyl]-  
 indenyl)zirconium dichloride,  
 dimethylsilanediyl(2-isopropyl-4-[4'-tert-  
 40 butylphenyl]indenyl)-(2-methyl-4-[3',5'-bis-tert-

butylphenyl]indenyl)zirconium dichloride,  
 dimethylsilanediyl(2-isopropyl-4-[4'-tert-  
 butylphenyl]indenyl)-(2-methyl-4-[1'-naphthyl]indenyl)-  
 zirconium dichloride,  
 5 ethylene(2-isopropyl-4-[4'-tert-butylphenyl]indenyl)-(2-  
 methyl-4-[4'-tert-butylphenyl]indenyl)zirconium dichloride,  
 di(2,6-di-i-propylphenyl)-2,3-  
 dimethyldiazabutadienepalladium dichloride,  
 10 di(di-i-propylphenyl)-2,3-dimethyldiazabutadienenickel  
 dichloride,  
 di(2,6-di-i-propylphenyl)-2,3-  
 dimethyldiazabutadienedimethylpalladium,  
 15 di(2,6-di-i-propylphenyl)-2,3-  
 dimethyldiazabutadienedimethylnickel,  
 di(2,6-dimethylphenyl)-2,3-dimethyldiazabutadienepalladium  
 dichloride,  
 20 di(2,6-dimethylphenyl)-2,3-dimethyldiazabutadienenickel  
 dichloride,  
 di(2,6-dimethylphenyl)-2,3-  
 dimethyldiazabutadienedimethylpalladium,  
 25 di(2,6-dimethylphenyl)-2,3-  
 dimethyldiazabutadienedimethylnickel,  
 di(2-methylphenyl)-2,3-dimethyldiazabutadienepalladium  
 dichloride,  
 30 di(2-methylphenyl)-2,3-dimethyldiazabutadienenickel  
 dichloride,  
 di(2-methylphenyl)-2,3-  
 dimethyldiazabutadienedimethylpalladium,  
 di(2-methylphenyl)-2,3-dimethyldiazabutadienedimethylnickel,  
 35 diphenyl-2,3-dimethyldiazabutadienepalladium dichloride,  
 diphenyl-2,3-dimethyldiazabutadienenickel dichloride,  
 diphenyl-2,3-dimethyldiazabutadienedimethylpalladium,  
 diphenyl-2,3-dimethyldiazabutadienedimethylnickel,  
 40 di(2,6-dimethylphenyl)azanaphthenepalladium dichloride,



di(2,6-dimethylphenyl)azanaphthenenickel dichloride,  
 di(2,6-dimethylphenyl)azanaphthenedimethylpalladium,  
 di(2,6-dimethylphenyl)azanaphthenedimethylnickel,  
 1,1'-bipyridylpalladium dichloride,  
 5 1,1'-bipyridylnickel dichloride,  
 1,1'-bipyridyldimethylpalladium,  
 1,1'-bipyridyldimethylnickel,  
 1-(8-quinolyl)-2-methyl-4-  
 10 methylcyclopentadienylchromium(III) dichloride,  
 1-(8-quinolyl)-3-isopropyl-5-  
 methylcyclopentadienylchromium(III) dichloride,  
 1-(8-quinolyl)-3-tert-butyl-5-  
 15 methylcyclopentadienylchromium(III) dichloride,  
 1-(8-quinolyl)-2,3,4,5-  
 tetramethylcyclopentadienylchromium(III) dichloride,  
 1-(8-quinolyl)tetrahydroindenylchromium(III) dichloride,  
 20 1-(8-quinolyl)indenylchromium(III) dichloride,  
 1-(8-quinolyl)-2-methylindenylchromium(III) dichloride,  
 1-(8-quinolyl)-2-isopropylindenylchromium(III) dichloride,  
 1-(8-quinolyl)-2-ethylindenylchromium(III) dichloride,  
 25 1-(8-quinolyl)-2-tert-butylindenylchromium(III) dichloride,  
 1-(8-quinolyl)benzindenylchromium(III) dichloride,  
 1-(8-quinolyl)-2-methylbenzindenylchromium(III) dichloride,  
 1-(8-(2-methylquinolyl))-2-methyl-4-  
 30 methylcyclopentadienylchromium(III) dichloride,  
 1-(8-(2-methylquinolyl))-2,3,4,5-  
 tetramethylcyclopentadienylchromium(III) dichloride,  
 1-(8-(2-methylquinolyl))tetrahydroindenylchromium(III)  
 dichloride,  
 35 1-(8-(2-methylquinolyl))indenylchromium(III) dichloride,  
 1-(8-(2-methylquinolyl))-2-methylindenylchromium(III)  
 dichloride,  
 1-(8-(2-methylquinolyl))-2-isopropylindenylchromium(III)  
 40 dichloride,

1- (8- (2-methylquinolyl)) -2-ethylindenylchromium(III)  
dichloride,  
1- (8- (2-methylquinolyl)) -2-tert-butylindenylchromium(III)  
dichloride,  
5 1- (8- (2-methylquinolyl)) benzindenylchromium(III) dichloride,  
1- (8- (2-methylquinolyl)) -2-methylbenzindenylchromium(III)  
dichloride,  
[1,3,5-tri (methyl) -1,3,5-triazacyclohexane] chromium  
10 trichloride,  
[1,3,5-tri (ethyl) -1,3,5-triazacyclohexane] chromium  
trichloride,  
[1,3,5-tri (octyl) -1,3,5-triazacyclohexane] chromium  
15 trichloride,  
[1,3,5-tri (dodecyl) -1,3,5-triazacyclohexane] chromium  
trichloride,  
[1,3,5-tri (benzyl) -1,3,5-triazacyclohexane] chromium  
20 trichloride, or mixtures thereof.

35. (New) The process for preparing a catalyst solid for  
olefin polymerization as claimed in claim 21, wherein said  
25 organometallic compound of formula (V) is n-butyllithium, n-  
butyl-n-octylmagnesium, n-butyl-n-heptylmagnesium,  
triphenylaluminum, triisoprenaluminum, tri-n-octylaluminum,  
tri-n-hexylaluminum, tri-n-butylaluminum,  
30 triisobutylaluminum, tri-n-propylaluminum, tri-  
isopropylaluminum, triethylaluminum,  
trisentafluorophenylborane, trimethylaluminum, or mixtures  
thereof.

35 36. (New) The process for preparing a catalyst solid for  
olefin polymerization as claimed in claim 34, wherein said  
organometallic compound of formula (V) is n-butyllithium, n-  
butyl-n-octylmagnesium, n-butyl-n-heptylmagnesium,  
40 triphenylaluminum, triisoprenaluminum, tri-n-octylaluminum,

tri-n-hexylaluminum, tri-n-butylaluminum,  
triisobutylaluminum, tri-n-propylaluminum, tri-  
isopropylaluminum, triethylaluminum,  
tris(pentafluorophenyl)borane, trimethylaluminum, or mixtures  
5 thereof.

37. (New) The process for preparing a catalyst solid for  
olefin polymerization as claimed in claim 21, wherein said  
10 organometallic compound of formula (V) is at least one  
borinic acid of formula  $R^4_2B(OH)$ , or at least one boronic  
acid of formula  $R^4B(OH)_2$ .

38. (New) The process for preparing a catalyst solid for  
olefin polymerization as claimed in claim 21, wherein said  
Lewis base is methylamine, aniline, dimethylamine,  
diethylamine, N-methylaniline, diphenylamine,  
20 trimethylamine, triethylamine, tripropylamine,  
tributylamine, N,N-dimethylaniline, N,N-diethylaniline, N,N-  
dimethylcyclohexylamine, benzylamine, N-benzyl dimethylamine,  
N-benzyl diethylamine, N-benzyl butylamine, N-benzyl-tert-  
25 butylamine, N'-benzyl-N,N-dimethylethylenediamine,  
N-benzylethylenediamine, N-benzylisopropylamine, N-  
benzylmethylamine, N-benzylethylamine, N-benzyl-1-  
phenylethylamine, N-benzyl-2-phenylethylamine, N-  
30 benzylpiperazine, or mixtures thereof.

39. (New) The process for preparing a catalyst solid for  
olefin polymerization as claimed in claim 37, wherein said  
Lewis base is methylamine, aniline, dimethylamine,  
35 diethylamine, N-methylaniline, diphenylamine,  
trimethylamine, triethylamine, tripropylamine,  
tributylamine, N,N-dimethylaniline, N,N-diethylaniline, N,N-  
dimethylcyclohexylamine, benzylamine, N-benzyl dimethylamine,  
40 N-benzyl diethylamine, N-benzyl butylamine, N-benzyl-tert-

butylamine, N'-benzyl-N,N-dimethylethylenediamine,  
N-benzylethylenediamine, N-benzylisopropylamine, N-  
benzylmethanamine, N-benzylethylamine, N-benzyl-1-  
phenylethylamine, N-benzyl-2-phenylethylamine, N-  
5 benzylpiperazine, or mixtures thereof.

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